

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of )  
Jeffrey A. Nelson et al. ) Group: 3671  
Serial No.: 10/765,228 )  
Filed: January 27, 2004 )  
Title: CLEANING SHOE SPREADERS ) Examiner: Alicia Torres

LETTER

MS Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Enclosed herewith, is the Revised Appeal Brief Of Appellants in the above-identified patent application.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Respectfully submitted,

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**Electronically filed May 15, 2007**

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**REVISED APPEAL BRIEF OF APPELLANTS**

MS Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This appeal is taken from the decision of the Examiner, dated August 10, 2006, finally rejecting claims 1-5 and 11-21, all of the claims that are under consideration in the above-captioned Patent Application. In response to the Final Office Action, Appellants timely filed a Notice of Appeal in this matter on November 10, 2006. An Appeal Brief was filed on February 12, 2007 with a Notification of Non-Compliant Appeal Brief being mailed on April 18, 2007. The present Revised Appeal Brief is being filed within one month of the mailing of the Notification of Non-Compliant Appeal Brief that resulted in a period for response set to expire on May 18, 2007.

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**I. REAL PARTY IN INTEREST**

The real party in interest is Deere & Co. to whom this application was assigned by Appellants according to the assignment document recorded with the Patent Office on 1/27/2004 at Reel 014939, Frame 0522.

## **II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

### **III. STATUS OF CLAIMS**

Pending: 1-5 and 11-21.

Canceled: 6-10.

Allowed: None.

Objected To: None.

Rejected: 1-5 and 11-21.

Withdrawn from Consideration: None.

On Appeal: 1-5 and 11-21.

A clean copy of claims 1-5 and 11-21, all the claims under appeal, is included as an Appendix to this brief.

**IV. STATUS OF AMENDMENTS**

No amendment was filed in this case subsequent to the final rejection.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention relates generally to a cleaning shoe spreader that extends into the longitudinal flow path of grain to be cleaned, which flaps back and forth by movement of the cleaning shoe to transversely distribute grain to be cleaned across the cleaning shoe.

Independent claims 1, 5 and 15 are reproduced below in annotated form, with reference numbers from the drawings inserted and with citations to paragraphs from the “Detailed Description” section of the application. An abbreviated description of the cleaning shoe spreader, also with citations to paragraphs of the application, follows the annotated claims.

**Annotated Claim 1** A spreader (60) (*see ¶ [0019]*) for a movable cleaning shoe (40) (*see ¶ [0017]*), the spreader (60) comprising:

a panel (62) (*see ¶ [0019]*) having an inner edge (64) (*see ¶ [0020]*) and an outer edge (66) (*see ¶ [0020]*), the inner edge (64) is provided with a mounting assembly (68) (*see ¶ [0020]*) and the outer edge (66) (*see ¶ [0020]*) is provided with an attached weight (72) (*see ¶ [0020]*), wherein the panel (62) (*see ¶'s [0019] and [0020]*) is flexible and resilient (*see ¶ [0020]*) and resiliently flaps back and forth due to movement of the shoe (*see ¶ [0019]*).

**Annotated Claim 5** A cleaning shoe (40) (*see ¶ [0017]*) for an agricultural harvesting machine (10) (*see ¶ [0013]*) comprising:

a movable frame (50) (*see ¶ [0019]*) having sidewalls (56) (*see ¶ [0019]*);

a sieve (46) (*see ¶ [0019]*) supported on the frame (50) (*see ¶ [0019]*), the sieve (46) (*see ¶ [0019]*) defining a longitudinal flow path for grain being cleaned (*see ¶ [0019]*), the sieve (46) having a plurality of longitudinally extending dividers (58) (*see ¶ [0019]*) located between and extending parallel to the sidewalls (56) affixed to a top surface thereof (*see Fig. 2*); and

spreaders (60) (*see ¶ [0019]*) mounted to and extending from the sidewalls (56) (*see ¶*



[0019]) and the plurality of longitudinally extending dividers (58) into the longitudinal flow path (see ¶ [0019]), the spreaders (60) comprising flexible and resilient panels (62) (see ¶ [0019]) having an attached weight (72) (see ¶ [0020]) at an outer edge (66) (see ¶ [0020]) thereof that resiliently flap back and forth due to movement of the frame (see ¶'s [0019] and [0020]).

**Annotated Claim 15** A cleaning shoe (40) (see ¶ [0017]) for an agricultural harvesting machine (10) (see ¶ [0013]) comprising:

a movable frame (50) (see ¶ [0019]) having sidewalls (56) (see ¶ [0019]);

a sieve (46) (see ¶ [0019]) supported on the frame (50) (see ¶ [0019]), the sieve (46) (see ¶ [0019]) being provided with longitudinally extending dividers (58) (see ¶ [0019]) defining a longitudinal flow path for grain being cleaned (see ¶ [0019]); and

spreaders (60) (see ¶ [0019]) mounted to and extending from the dividers (58) and the sidewalls (56) into the longitudinal flow path (see ¶ [0019]), the spreaders (60) comprising flexible and resilient panels (62) (see ¶ [0019]) having a weight 72 (see ¶ [0020]) attached to an outer edge (66) (see ¶ [0020]) thereof that resiliently flap back and forth due to movement of the frame (see ¶'s [0019] and [0020]).

#### **A. DESCRIPTION OF THE ELEMENTS OF THE FOREGOING CLAIMS**

Selected paragraphs from the specification follow, and included therewith are the paragraph number references that precede each paragraph:

[0013] FIG. 1 shows an agricultural harvesting machine in the form of a combine 10 comprising a supporting structure 12 having ground engaging wheels 14 extending from the supporting structure. Although the combine is illustrated as having wheels it could also have ground engaging tracks either full tracks or half tracks. A harvesting platform 16 is used for harvesting a

crop and directing it to a feeder house 18. The harvested crop is directed by the feeder house 18 to an infeed beater 20. The infeed beater 20 directs the crop upwardly through an inlet transition section 22 to the axial crop processing unit 24.

[0018] The illustrated cleaning shoe 40 is a reciprocating shoe wherein the chaffer sieve and the secondary sieve are reciprocated relative to one another. The frame 44 comprises an upper frame 50 and a lower frame 52 that are joined together by hangers 54. The chaffer sieve 46 is supported on the upper frame 50 and the secondary sieve is supported on the lower frame 52. Although the invention is illustrated as being used on a reciprocating cleaning shoe, the present invention can be used on other cleaning shoe types including shaker shoes and cascading shoes. In addition, the present invention can be used on the chaffer sieve or the secondary sieve.

[0019] The upper frame 50 of the cleaning shoe 40 is provided with two sidewalls 56 having interior surfaces facing the chaffer sieve 46. Three longitudinally extending dividers 58 are mounted to the chaffer sieve 46. Spreaders 60 are mounted to the sidewalls 56 and the dividers 58 and extend into the longitudinal flow path of grain being cleaned passing over the chaffer sieve 46. Each spreader 60 comprises a panel 62 extending into the flow path. Movement of the cleaning shoe 40 drives the panels 62 to flap back and forth. This flapping action of the panels distributes the grain to be cleaned transversely across the chaffer sieve so that the cleaning assembly operates more efficiently.

[0020] In the illustrated embodiment, the spreaders 60 are flexible and resilient panels. The flexible and resilient panels have an inner edge 64 and an outer edge 66. The inner edge 64 is secured to a mounting channel 68 located on the cleaning shoe sidewalls 56 and the dividers 58

by mounting bolts 70, rivets, or some other suitable mounting mechanism. The outer edge 66 is provided with weights 72 to accentuate the flapping movement of the panel 62. In the illustrated embodiment, the weights comprise mounting bolts bolted to the panel 62 although other weight designs could be used. The panels 62 extend outwardly from the sidewalls 56 and the dividers 58 in a downstream direction. At rest, the downstream extending panels 62 form an acute angle with the sidewalls 56 and the dividers 58 of between 30 and 60 degrees. The mounting channel 68 defining the same acute angle.

[0022] In another embodiment, the spreader 60 may comprise a rigid panel that is pivotally mounted to the sidewalls 56 and the dividers 58. The rigid panel is biased and maintained in the downstream acute angle position discussed above by springs. Again, movement of the cleaning shoe 40 drives the flapping motion of the rigid panel.

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1. Whether claims 1-4 are unpatentable over U.S. Patent No. 2,732,941 (Deiss) in view of U.S. Patent No. 3,722,802 (Kreienbaum).
2. Whether claims 5, 11, 12, 15-18, 20 and 21 are unpatentable over Deiss in view of U.S. Patent No. 4,875,889 (Hagerer) and Kreienbaum.
3. Whether claims 13, 14 and 19 are unpatentable over Deiss in view of Hagerer and Kreienbaum and in further view of U.S. Patent No. 3,731,475 (Balthes).

## **VII. ARGUMENT**

### **A. CLAIMS 1-4 ARE PATENTABLE OVER THE COMBINATION OF DEISS IN VIEW OF KREIENBAUM.**

In the final Office Action, claims 1-4 were rejected under 35 U.S.C. § 103 as being unpatentable over Deiss in view of Kreienbaum. However, Appellants submit that claims 1-4 are neither taught, disclosed nor suggested by the cited references, alone or in combination and are therefore in condition for allowance.

#### **1. The Teachings of the Cited References**

a.) Deiss describes a sieve and chaffer similar to the claimed sieve and chaffer but with a stationary baffle (41,43) for spreading the grain around.

b.) Kreienbaum is unrelated to combines, chaffers or sieves. Kreienbaum describes a traditional agricultural spreader (aka a manure spreader) with a spinning axle from which tines extend. These tines extend outward from the axle under centrifugal force when the axle is spun at high speed such that their free ends engage the manure, tear it apart and fling torn-off chunks across the agricultural field.

#### **2. Independent Claim 1 Is Patentable Over The Cited References:**

In paragraph 2 of the final Office Action (the “OA”) (mailed 08/10/2006) the Examiner rejected claims 1-4 under 35 U.S.C. §103(a), as being unpatentable over US Patent 2,732,941 to Deiss (hereinafter “Deiss”) in view of US Patent 3,722,802 to Kreienbaum (hereinafter “Kreienbaum”). The Appellants respectfully traverse this rejection of the claims. The Examiner has failed to make a prima facie obviousness rejection by failing to identify any reference that teaches a spreader having a panel that is “flexible” and “resilient” so that it can “flap back and forth due to movement of the shoe” as recited in claim 1.

The Examiner stated that “the panels (41) [of Deiss] have an inherent flexibility and resilience due to the nature of the material from which they are constructed, as per claim 1”. While they may have an “inherent flexibility and resilience” -- i.e. they have a modulus of elasticity (like every material) -- they are not inherently “flexible” or “resilient” as recited by the claims.

The Examiner also stated that the outer edge (41) of Deiss “inherently has a weight” but that it does not have “an attached weight on the outer edge that causes the panel to flap back and forth.” The Examiner explains that Kreienbaum’s manure spreader can nonetheless be modified by “fitting additional weights” (OA, p.2, last line) to Kreienbaum’s rotor in order to “shift the center of gravity to improve the effect of centrifugal force” (OA, p.3, lines 2-3). This teaching comes from Kreienbaum, who states that

“additional weights may be fitted to the spreader tools in order to displace their center of gravity, e.g. to shift them further outwards and thus to improve the effect of centrifugal force at a given carrier speed. This may, in particular, be an advantage when handling tough and heavy material.

Kreienbaum, col. 7, lines 23-29.

In Kreienbaum’s manure spreader, centrifugal force generated by the rapidly spinning carrier<sup>14</sup> (i.e. the rotating spreader shaft) is the only thing that holds his tools outward where they can bash against the “tough and heavy” clods of manure. As he explains:

As carrier 14 rotates, the spreader tools 19 tend to adopt a radial attitude under the effect of centrifugal force whereas under the effect of gravity, with the carrier 14 stationary, they hang freely down.

The Deiss and Kreienbaum references cannot be combined because they are not from analogous arts. They have different patent classifications. They solve different problems. Finally, the Examiner has engaged in impermissible hindsight to find the teaching to combine.

Deiss's spreaders (baffles 41, 43) are fixed and stationary. They do not move and thus generate no centrifugal force. They are stationary, positioned above an oscillating bed of grain that flows rearward to scrape off the top of the layer of loose grains and push them toward the middle of the sieve/chaffer.

Kreienbaum's spreader tool is a pivotal bar coupled to a high speed rotating shaft that spins outward to hammer against clods of manure, bust them apart and fling them far over the ground.

Additional weight would enhance Kreienbaum's operation since it is connected to a spinning shaft. Increased weight would not do anything to improve the performance of Deiss stationary spreaders (baffles 41,43) since they are stationary.

The Examiner has relied on the Appellants' own teaching of a spreader panel that flaps back and forth to manufacture a combination of Deiss and Kreienbaum.

**B. CLAIMS 5, 11, 12, 15-18, 20 AND 21 ARE PATENTABLE OVER THE COMBINATION OF DEISS, HAGERER AND KREIENBAUM.**

In the Final Office Action, claims 5, 11, 12, 15-18, 20 and 21 were rejected under 35 U.S.C. § 103 as being unpatentable over Deiss in view of Hagerer and Kreienbaum. Appellants submit that claims 5, 11, 12, 15-18, 20 and 21 are neither taught, disclosed nor suggested by the cited references, alone or in combination, and therefore are in condition for allowance.

**1. The Teachings of the Cited References**

The background of Deiss and Kreienbaum references are discussed above. Hagerer teaches electrically adjustable vanes that push the grain to one side or the other.

**2. Independent Claims 5 and 15 Are Patentable Over The Cited References:**

The Appellants respectfully traverse this rejection of the claims: see the Appellants' arguments above regarding the First Ground (Section 'A'). The Examiner's grounds are the same regarding the combination of Deiss and Kreienbaum. The Appellants' arguments are therefore equally applicable here.

Furthermore, Hagerer teaches electrically adjustable vanes that push the grain to one side or the other. Nowhere does Hagerer discuss vanes that flap or vanes with attached weights.

**C. CLAIMS 13, 14 AND 19 ARE PATENTABLE OVER DEISS IN VIEW OF HAGERER, KREIENBAUM AND IN FURTHER VIEW OF BALTHES.**

In the Final Office Action, claims 13, 14 and 19 were rejected under 35 U.S.C. § 103 as being unpatentable over Deiss in view of Hagerer and Kreienbaum and in further view of Balthes. Appellants submit that claims 13, 14 and 19 each depend from independent claims that are in allowable condition. Further, Appellants submit that claims 13, 14 and 19 are neither taught, disclosed nor suggested by the cited references, alone or in combination, and therefore are in condition for allowance.

**1. The Teachings of the Cited References**

Deiss, Kreienbaum and Hagerer are discussed above. Balthes disclose a tobacco plant leaf harvester with "flexible, finger-like paddles 44" mounted on a moving chain 48. As leaves are cut from the tobacco plant, they fall onto the paddles (44) which hold them in the air above the knives. Balthes' paddles convey and orient leaves that are cut from a tobacco plant to a



vertical conveyor. The conveyor paddles recirculate to the front of the cutting platform and repeat the process (Balthes, FIG. 3, col. 3, lines 27-63). The conveyor paddles in the Balthes conveyor travel at the same speed as the tobacco plants (col. 9, lines 46-49), supporting the leaves untouched above the knives (col. 9, 58-63). The Balthes paddle is not a spreader, but a conveyor. It is not for a grain harvester, but for a tobacco harvester. It does not spread grain that is traveling on a sieve or chaffer underneath it, but supports and conveys leaves, holding them up above a knife.

## **2. Dependent Claims 13, 14 and 19 Are Patentable Over The Cited References:**

The Appellants respectfully traverse this rejection of the claims: see the Appellants' arguments above regarding the First Ground (Section 'A') and the Second Ground (Section 'B'). The Examiner's grounds are the same regarding the combination of Deiss and Kreienbaum and Hagerer. The Appellants' arguments are therefore equally applicable here.

The Examiner states that Deiss, Kreienbaum, and Hagerer "fail to show wherein the panels are rubber", and that it would be obvious to "include the rubber panels of Balthes on the device of Deiss and Hagerer and Kreienbaum in order to provide flexibility."

There is no teaching to provide flexibility. Deiss discloses stationary spreaders (baffles 41,43) with no weights. Kreienbaum discloses spreader tools 19 that are pivotally coupled to a shaft to "swing" or "pivot" about that pivot point when the hit clods of manure. Nowhere does Kreienbaum suggest that flexibility" or "flapping" of the tools (as recited in the present claims) is beneficial. Hagerer discloses vanes that can be moved inward or outward to guide the grain. Hagerer also does not disclose or suggest that "flexibility" or "resilience" or "flexibility" or "flapping" of his vanes is beneficial.

Balthes discloses a tobacco plant leaf harvester with "flexible, finger-like paddles [44]" mounted on a moving chain (48). As leaves are cut from the tobacco plant, they fall onto

the paddles (44) which hold them in the air above the knives. Balthes' paddles convey and orient leaves that are cut from a tobacco plant to a vertical conveyor. The conveyor paddles recirculate to the front of the cutting platform and repeat the process (Balthes, FIG. 3, col. 3, lines 27-63). The conveyor paddles in the Balthes conveyor travel at the same speed as the tobacco plants (col. 9, lines 46-49), supporting the leaves untouched above the knives (col. 9, 58-63). The Balthes paddle is not a spreader, but a conveyor. It is not for a grain harvester, but for a tobacco harvester. It does not spread grain that is traveling on a sieve or chaffer underneath it, but supports and conveys leaves, holding them up above a knife.

In short, the Deiss baffles 41, 43 and the Balthes conveyor paddles 44 are from non-analogous art. While the Balthes conveyor paddles are described as "flexible" Balthes does not explain why conveyor paddles should be flexible, nor does Balthes explain how much flexibility is appropriate. At best, Balthes teaches flexible moving conveyor paddles. Since the Deiss paddles are stationary and do not convey material through the sieve and chaffer, Balthes' teaching of flexible conveyor paddles has nothing to teach or suggest regarding Deiss-type stationary spreaders.

Again, the Examiner resorts to impermissible hindsight when she states that it would have been obvious to provide Deiss baffles with flexible Balthes conveyor paddles "in order to improve flexibility" when there is nothing in either Balthes, Kreienbaum or Deiss to suggest that Deiss-type baffles need to be flexible.

Deiss that suggests spreader paddles should be flexible. Only the present application teaches the benefit of flexible resilient spreader panels that flap.

### **CONCLUSION.**

For the foregoing reasons, Appellants submit that claims 1-5 and 11-21, which consist of

independent claims 1, 5 and 15, and the claims depending therefrom, are neither taught nor suggested by the cited references, alone or in combination, and claims 1-5 and 11-21 are therefore in condition for allowance in their present form. Accordingly, Appellants respectfully request the Board to reverse the final rejections of the appealed claims.

Respectfully submitted,

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**Electronically filed May 15, 2007**

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**VIII. CLAIMS APPENDIX**

1. A spreader for a movable cleaning shoe, the spreader comprising:  
  
a panel having an inner edge and an outer edge, the inner edge is provided with a mounting assembly and the outer edge is provided with an attached weight, wherein the panel is flexible and resilient and resiliently flaps back and forth due to movement of the shoe.
2. The spreader as defined by claim 1 wherein the cleaning shoe reciprocates.
3. The spreader as defined by claim 1 wherein the cleaning shoe shakes.
4. The spreader as defined by claim 1 wherein the mounting assembly defines an acute downstream angle for the panel.
5. A cleaning shoe for an agricultural harvesting machine comprising:  
  
a movable frame having sidewalls;  
  
a sieve supported on the frame, the sieve defining a longitudinal flow path for grain being cleaned, the sieve having a plurality of longitudinally extending dividers located between and extending parallel to the sidewalls affixed to a top surface thereof; and  
  
spreaders mounted to and extending from the sidewalls and the plurality of longitudinally extending dividers into the longitudinal flow path, the spreaders comprising flexible and resilient panels having an attached weight at an outer edge thereof that resiliently flap back and forth due to movement of the frame.
- 6-10 (cancelled).

11. The cleaning shoe blade as defined by claim 5 wherein the panels extend downstream at an acute angle to the sidewalls and the dividers.

12. The cleaning shoe as defined by claim 11 wherein the panels have an inner edge provided with a mounting assembly.

13. The cleaning shoe as defined by claim 5 wherein the panels comprise a flexible and resilient rubber belting material.

14. The cleaning shoe as defined by claim 11 wherein the acute angle is between 30 and 60 degrees.

15. A cleaning shoe for an agricultural harvesting machine comprising:  
a movable frame having sidewalls;  
a sieve supported on the frame, the sieve being provided with longitudinally extending dividers defining a longitudinal flow path for grain being cleaned; and  
spreaders mounted to and extending from the dividers and the sidewalls into the longitudinal flow path, the spreaders comprising flexible and resilient panels having a weight attached to an outer edge thereof that resiliently flap back and forth due to movement of the frame.

16. The cleaning shoe as defined by claim 15 wherein the panels extend downstream at an acute angle to the dividers.

17. The cleaning shoe as defined by claim 16 wherein the panels have an inner edge provided with a mounting assembly.

18. The cleaning shoe as defined by claim 16 wherein the acute angle is between 30 and 60 degrees.

19. The cleaning shoe as defined by claim 18 wherein the panels comprise a flexible and resilient rubber belting material.

20. The cleaning shoe as defined by claim 15 wherein the movable frame reciprocates.

21. The cleaning shoe as defined by claim 15 wherein the sieve is a chaffer sieve.

**IX. EVIDENCE APPENDIX**

No additional evidence is being provided by the Appellants at this time.

**RELATED PROCEEDINGS APPENDIX**

No related proceedings are known to the Appellants.